Exhibit 2

IN THE UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

NEONODE SMARTPHONE LLC, Plaintiff, v. SAMSUNG ELECTRONICS CO. LTD, and SAMSUNG ELECTRONICS AMERICA, INC., Defendants.	§ § § § § § § § §	Civil No. 6:20-cv-00507-ADA **JURY TRIAL DEMANDED**

DECLARATION OF ANDY COCKBURN IN SUPPORT OF
DEFENDANTS' OPENING CLAIM CONSTRUCTION BRIEF

I, Andy Cockburn, hereby declare as follows:

1. I have been retained as an expert witness on behalf of Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively referred to as "Samsung" or "Defendants") in the above-referenced litigation. I understand that this Declaration is being relied upon by Defendants' Opening Claim Construction Brief.

2. I am being compensated for my time in connection with this matter at an hourly rate of $500. My compensation is in no way dependent on the outcome of this matter.

3. I have been asked to opine on matters related to claim construction for U.S. Patent No. 8,095,879 ("the '879 patent").

4. In preparing this Declaration, I have reviewed the '879 patent and its file history, the constructions proposed by the parties, and any other documents referenced in this Declaration.

5. In forming the opinions expressed in this Declaration, I relied upon my education and experience in the relevant field of the art and have considered the viewpoint of a person having ordinary skill in the relevant art as of 2002 for the '879 patent.

I. BACKGROUND AND QUALIFICATIONS

6. My background and expertise that qualify me as an expert in the technical issues in this case are as follows:

7. I am a Professor at the Department of Computer Science and Software Engineering at the University of Canterbury, New Zealand. I also currently head the HCI (which stands for "Human-Computer Interaction") and Multi-Media research group at the University of Canterbury.

8. In 1988, I was awarded a Bachelor of Science with Honors in Computer Science from the University of York, England.

9. In 1993, I was awarded a Ph.D. from the University of Stirling, Scotland. My thesis was on "Computer Supported Cooperative Work" which relates to forms of group interaction supported on computer.

10. In 1993, I joined the University of Canterbury as a Lecturer in the Department of Computer Science (now the Department of Computer Science and Software Engineering). I was subsequently promoted to a Senior Lecturer, and then an Associate Professor, before my appointment as a Professor in 2010. I currently hold this title of Professor.

11. I have over 25 years' experience in the area of human-computer interaction ("HCI"). The field of HCI generally is concerned with ways of understanding and improving the interaction between humans and computers, with a view to understanding, evaluating, designing and building new styles of interactions that improve on one or more of the end goals of making computers (including mobile devices) faster to learn, more intuitive, and more efficient and satisfying to use. Advances in the field of HCI are commonly associated with the development of new hardware and/or software, such as exploring the interaction possibilities enabled by a new input/output device or sensor, and examining new ways to process human input or create new interactive effects in software.

12. Throughout my career, I have published the results of many research projects that have involved building new user interfaces or reviewing existing user interfaces for performing a particular task, and evaluating their effectiveness. This includes publications relating to:

- designing, implementing, and evaluating touchscreen interface for pen-based input of music notation;

- reviewing and improving various interface schemes for traversing through documents in computer applications, including zooming, scrolling, and other techniques;
- addressing the problems arising from the small form factor of mobile devices with touch-sensitive displays;
- evaluating the importance of spatially stable displays in user interfaces;
- analyzing new interfaces for text entry on mobile and touch-sensitive devices;
- examining the influence of haptic feedback on user performance with mouse and touchscreen input devices; and
- designing, implementing, and evaluating interfaces to better support transitions from novice to expert performance.

13. I also have extensive experience in designing and building new user interfaces and reviewing existing user interfaces. This includes a number of projects regarding the design, development and evaluation of user interfaces that I have undertaken with companies in the computing and HCI industry, such as:

- working with Airbus SAS since 2016 on methods to assist pilot interaction with touchscreens in turbulent environments, including pan, slide, and zoom operations;
- working with Hewlett-Packard Research Labs from 2010-2012 on the design and evaluation of pointing techniques for remote displays, such as interactive TVs;
- a number of projects from 2006-2010 working with Logitech on the design, development, evaluation and improvement of user interfaces for next generation

mice, including in relation to scrolling and window management tasks through overview displays, which relate to zooming;

- working with IBM Almaden Research in 2006 on the design, development and evaluation of user interfaces for touch-sensitive text entry on mobile devices;
- working with Digit Wireless in 2002 on the evaluation of user performance for user interfaces for digital text entry on mobile devices; and
- working with Microsoft Research in 1999 on the development, evaluation and improvement of user interfaces for web browsing, in particular the mechanisms for revisiting pages (such as through the "back" button or bookmarks).

14. At the University of Canterbury, I currently teach the following courses:

- a course on introductory computer programming designed for first year students across disciplines;
- a course on computer science research methodology for postgraduate students;
- courses on HCI for computer science students at all university levels (including honors and masters level students).

15. I also manage an active research lab with a number of graduate level students. I have previously supervised thirteen students to successful completion of their Ph.D.'s in the field of HCI.

16. In 2015 I was elected to the Association of Computing Machinery (ACM) Computer Human Interaction (CHI) Academy, which honors the principal leaders of the field of HCI. I have been a continuous member of the ACM for over three decades.

17. Since the early 1990s, I have routinely attended annual conferences relating to the field of HCI and have regularly read journals that cover research in the field of HCI.

18. I have served on the editorial boards of leading journals in the HCI field (including ACM Transactions on Computer-Human Interaction, Human-Computer Interaction Journal, and International Journal of Human-Computer Studies, Interacting with Computers, and Foundations and Trends In Human Computer Interaction), and have participated in the review process for numerous articles, including articles related to sliding interactions on touch-sensitive input devices.

19. I have served in senior leadership roles for the leading conference in the field of HCI—the ACM CHI Annual Conference on Human Factors in Computing Systems. I was technical program co-chair for CHI 2020, I served as paper and notes chair for CHI 2014 and 2015, and as subcommittee chair for CHI 2011. I served on the inaugural steering committee for the ACM CHI conference (2016-2020).

20. I have authored over one hundred and fifty publications related to HCI in international journals and conferences

21. Details of my professional qualifications and background are more fully set forth in my curriculum vitae, a copy of which is attached as Appx. A.

22. I have previously offered testimony as an expert witness in the field of HCI. A list of my prior engagements in which I testified as an expert at trial or by deposition is also included in my CV.

23. Based on my background and experience, as set forth more fully in my CV, I am familiar with the state of the art in the field of user-interface design and development as of December 10, 2002, which I understand is the filing date of the application that issued as the '879 patent, as well as 2000-2002, where I understand that Neonode has alleged a conception date of "no later than 5/25/2000 for the '879 patent." I was at those times and still am a technical

expert in the fields relating to the '879 patent and other related fields, and I remain an active researcher in these fields.

24. Based on my professional experience, I believe I am qualified to testify as an expert on matters related to the patent at issue.

II. UNDERSTANDING OF THE LAW

25. I am not a legal expert and therefore I offer no opinions on the law. However, I have been informed and am aware of legal standards that are relevant to my analysis, as summarized below.

26. I have been informed and understand that claims are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art ("POSITA") at the time of the alleged invention, in light of the patent specification and prosecution history. Such an individual is considered to possess ordinary skills and knowledge in a particular technical field and is not an automaton. I have been informed that claim construction is a matter of law and that the final claim constructions for this proceeding will be determined by the Court.

27. It has been explained to me that the patent statute includes a requirement that claims be definite. I have been informed that, to meet this "definiteness" requirement, the claims must particularly point out and distinctly claim the subject matter that the applicant regards as his or her invention. I understand that indefiniteness is evaluated from the perspective of a POSITA at the time of a patent's filing. It has been explained to me that a patent claim is indefinite if the claim, when read in light of the specification and the prosecution history, fails to inform a POSITA of the scope of the invention with reasonable certainty. It was further explained to me that absolute or mathematical precision in claim language is not required. However, it is not

enough that some meaning can be ascribed to a patent's claims. A claim is indefinite if its language might mean several different things and no informed and confident choice is available among the contending definitions.

28. I have been informed and understand that a patentee's statements during inter partes review should also be considered in evaluating the meaning of a claim.

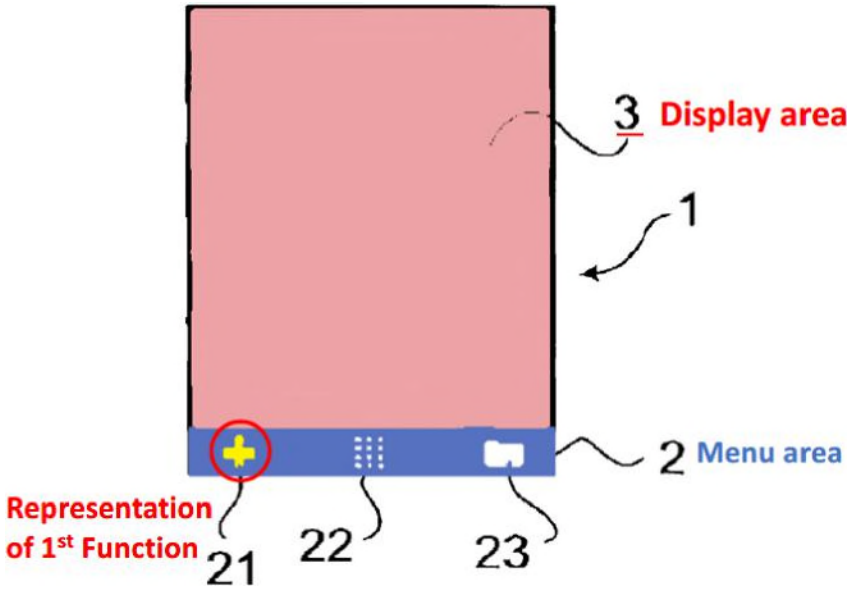
29. I have been informed by counsel that the claim language "consists of" is a term of art in patent law with a distinct and well-established meaning, and there is an exceptionally strong presumption that a claim term set off with "consisting of" is closed to unrecited elements.

III. THE '879 PATENT

A. Summary of the '879 Patent

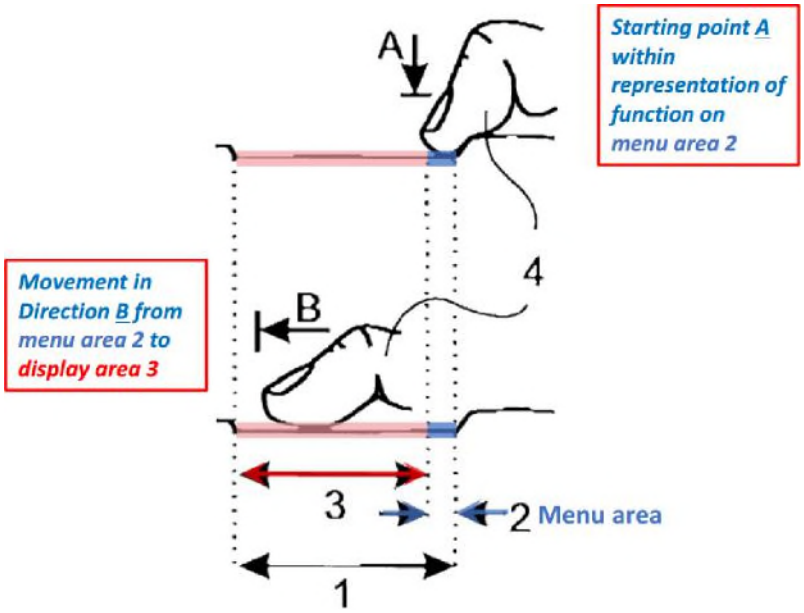
30. The '879 patent "relates to a user interface for a mobile handheld computer unit, which computer unit comprises a touch sensitive area." Ex. 1 ('879 patent) at 1:6-8. The '879 patent recognizes that "[m]obile handheld computers" include a "mobile phone," a "personal digital assistant (PDA)," and a "laptop computer." *Id.* at 1:24-33.

31. Figure 1 illustrates a "user interface" with "a touch sensitive area 1, which is divided into a menu area 2 and a display area 3." *Id.* at 3:51-54. Menu area 2 is "adapted to present a representation of a first 21, a second 22 and a third 23 predefined function." *Id.* at 4:1-3.



Id. at FIG. 1 (annotated).

32. "FIG. 2 [below] shows that any one of these three functions 21, 22, 23 can be activated when the touch sensitive area 1 detects a movement of an object 4 with its starting point A within the representation of a function on the menu area 2 and with a direction B from the menu area 2 to the display area 3." *Id.* at 4:7-11, FIG. 2 (annotated).



33. The ’879 patent discloses “the object 4 can be a finger” or “a pen or other pointing device.” *Id.* at 6:11-15.

B. Level of Ordinary Skill in the Art

34. I have also been advised that a POSITA is a hypothetical person who is capable of understanding the scientific and engineering principles applicable to the relevant art of the claimed subject matter. I understand that a POSITA is presumed to have known the relevant prior art at the time of the alleged invention.

35. I understand the application that issued as the ’879 patent was filed on December 10, 2002 (the “critical date”). In my opinion, a POSITA as of the critical date of the ’879 patent would have had at least a bachelor’s degree in computer science, computer engineering, or the equivalent education and at least two years of experience in user-interface design and development. Additional years of experience could substitute for formal education, and vice versa.

36. Based on my experience, education, and training, I met the definition of a POSITA in December of 2002, the time of the critical date of the ’879 patent. I also had greater knowledge and experience than a POSITA. I worked with POSITAs in 2002, and I am able to render opinions from the perspective of a POSITA based on my knowledge and experience. My opinions concerning the ’879 patent claims and the prior art are from the perspective of a POSITA, as set forth above. If the Patent Owner alleges an earlier invention date, such as 2001 or 2000, my opinions from the perspective of a POSITA at that time would not change.

37. I understand that Neonode has not yet offered its view of the level of ordinary skill in the art. To the extent that Neonode or its expert provides its view of the level of ordinary skill in the art, I reserve the right to respond to the extent that opinion is different than mine. I

also note that my opinions provided in this Declaration would not change in view of any insignificant modifications to this level of skill.

IV. CLAIM CONSTRUCTIONS

A. "the representation consists of only one option for activating the function" ('879 Patent, claim 1)

Defendants' Proposed Construction	Neonode's Proposed Construction
Indefinite.	Plain meaning.

1. Claim Language

38. This term has no plain and ordinary meaning to a POSITA and the ambiguity inherent in the plain language of the claim creates multiple unanswerable questions as to its scope. As stated above, I have been informed by counsel that the claim language "consists of" is a term of art in patent law with a distinct and well-established meaning, carrying an exceptionally strong presumption that the scope of the claim term is closed to unrecited elements. With this understanding, the phrase would close the "representation" off from unrecited elements, but there is no reasonable guidance in the claims or intrinsic record as to what is included and excluded from the claimed "representation."

39. The claim lacks any reasonable clarity as to how the unidentified features of a "representation" are closed off by the phrase "consists of only one." While a POSITA would recognize a representation might have some *visual* aspect, the claims do not require that the representation be displayed, but merely "provided." Thus, the scope of the claim would include a representation that is printed, engraved, or otherwise affixed on the touch sensitive area. The claim does not specify any *visual* aspect of the "representation" other than it represents "a function." The representation might also have a physical or structural aspect, e.g., to provide tactile information to the user, but that is not mentioned in the claim (or specification).

40. As described in the following paragraphs, a POSITA would not know whether the claim term "representation consists of only one option for activating the function" related to visual aspects of the representation, to the availability of gesture(s) associated with the representation, or to the function(s) accessible from the representation.

41. Does this term limit the representation to a single visual aspect? The claim does not explicitly require a specific visual component, and there is no indication regarding what type of visual aspects may be included or excluded. As noted above, the claims allow for the representation to be engraved or printed on the touch sensitive area. A POSITA would readily understand that the visual aspect of such representation could not readily change and thus be limited to only that one visual aspect. Conversely, the claims also allow for a representation displayed on a display screen within the touch sensitive area. A POSITA would understand that the visual aspects of such representations have the potential to change or remain static, dependent on the underlying software controlling the visual aspects of the representation. Furthermore, even if the displayed visual aspect of the representation remained static, a POSITA would understand that a static representation may display more than one available function—for example, the ISO/IEC 9995-8 standard numeric keypad, as shown below, was commonly emulated within user interfaces before 2002. It includes some interactive representations that depict only one function (e.g., "1"), while other representations depict several functions (e.g., "ABC 2"). Under this "visual aspect" interpretation, a POSITA could not ascertain whether the "consists of" language limits the representation to being affixed to the device, whether it allows for software generated representations that do or do not change, or whether it limits the range of functions displayed within the representation.

42. A POSITA would also recognize that another aspect of the "representation of the function" would be how to interact with it in order to activate the function(s). For example, the phrase "option for activating" seems to refer to how a user interacts with the representation to invoke a response from the user interface (i.e. "only one option for activating"). For example, the only "option for activating the function" addressed in the claims is a user gesture such as "gliding." An "option for activating" could refer to an action or type of input gesture by the user, where a tap, a drag, and a long press might each be a separate "option." A POSITA would also understand that gestures such as a drag-left and drag-right would each be a different "option." The '879 patent, for example, instructs that "direction B" is part of the "movement" for activating functions 21, 22, and 23. Ex. 1 ('879 patent) at 4:7-11. But the claim is unclear whether the "only one option" requires that the user interface be programmed to recognize only a single type of user gesture (such as a tap, a drag-left, a drag-right, or a long press) to activate a given function, or that the claim instead requires that only a single gesture (of any kind) is used to activate the function. Reading the "consists of" language to limit how a user interacts with the representation also causes confusion because a POSITA would typically not consider a representation as "consist[ing]" of a user gesture or the software response to a user gesture. The

gesture "options" are manners in which a user may interact with the representation, and they would not be considered as part of the representation. A POSITA would readily understand that these gestures (e.g., tap, drag, long press, etc.) may be used in a variety of ways with the user interface and are not tied to any specific representation.

43. A POSITA would also recognize that another aspect related to the "representation of the function" is what function(s) the representation is associated with. I understand that "a" in the context of a patent claim can refer to "one or more", and "the" therefore could refer to "the one or more," in which case the language of the claim would not limit the representation to representing a single function, where "a function" and "the function" could mean one or more functions. While a POSITA would interpret the phrases "a function" and "the function" as referring to the same function, a POSITA would not know whether "the representation consists of only one option for activating the function" is intended to: (a) *limit the number of functions* associated with the representation (i.e., only a single function is associated with the representation (no other function is associated with the representation)), but the function may be activated by multiple types of gestures, (b) allow for multiple functions associated with the representation, but the disputed term *limits the way in which each function is activated* to one gesture (i.e., no other gesture can activate *the* function, but, if the representation also corresponds to a second function, a second, different gesture (and only that gesture) in connection with the representation would activate that second function), or (c) limit both the number of functions and number of ways in which the function is activated (i.e., the phrase limits the representation to only one function and only one way of activating (one gesture) that one function). However, the claims provide no guidance on which of these interpretations might be correct.

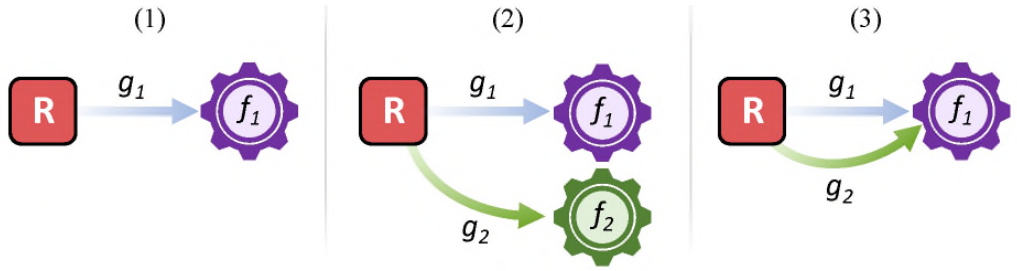
44. The claim language includes multiple inherent ambiguities that compound upon one another, resulting in multiple, equally plausible meanings, where the selection of any one interpretation over another would be mere guesswork. For example, at least the below three possible interpretations would be readily identified by a POSITA. A POSITA would understand there are additional possible interpretations of the claim, particularly related to the visual aspect of the representation. However, I have focused on the following three meanings in view of the applicant's arguments in the prosecution history and what Neonode argued in the IPR proceedings:

(1) The representation represents a **single function** and there is only a **single option** for how to activate the function (e.g., only one specific input gesture, such as tap or drag-left, will activate the function);

(2) The representation may represent **multiple functions** but there is only a **single option** for how to activate one particular function (e.g., only one specific input gesture will activate one function, but, if the representation also represents a second different function, then only a second different input gesture will activate that second function); and

(3) The representation represents a **single function** and the claim allows for **multiple options** for how to activate the function (e.g., any input gesture, such as tap or drag in any direction, will activate the single function).

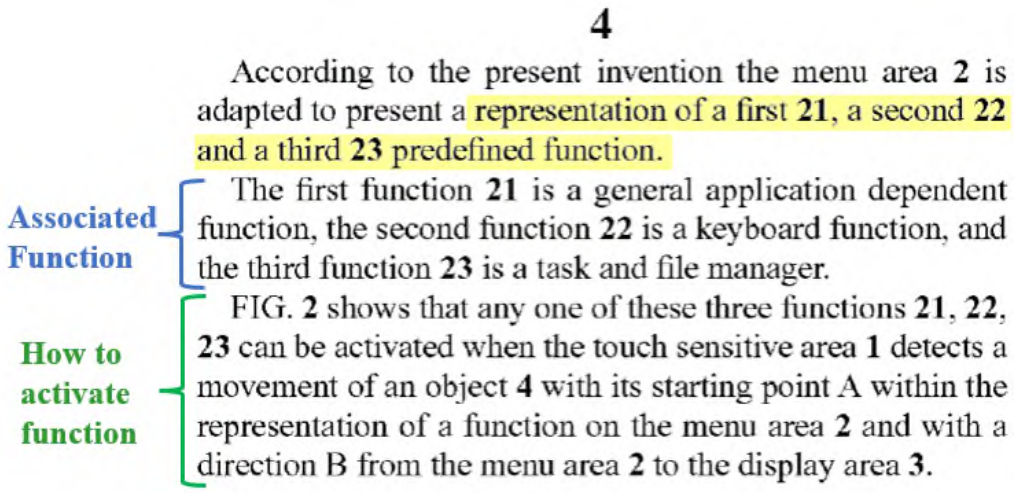
These three possible meanings are illustrated below, where the "R" refers to "representation," "f" refers to a "function," and "g" refers to a gesture:



The scope of claim 1 varies significantly depending on which of these meanings are applied. However, no informed and confident choice is available among these definitions.

2. Specification

45. The specification offers no additional guidance relating to the meaning of this disputed claim phrase. The patent discusses only two aspects of a "representation of a function"—which function(s) is associated with representation, and how to activate the function by interacting with the representation:



Ex. 1 ('879 patent) at 4:1-11 (emphasis added). The word "option" does not appear in the specification (nor does the broader phrase "only one option for activating the function"), and the specification does not describe the "representation" as "consist[ing]" of anything, let alone how the representation might consist of "only one option for activating the function." The specification (and the claims) recites that the representation is "present[ed]," and does not explain what the representation "consists of," or require nor limit whether it is displayed, or any visual or physical aspect of the representation. The specification also does not limit what action of the user can activate the functions 21, 22, and 23, leaving open the ability to activate a function, for example, with a tap gesture in addition to the "movement" shown in Figure 2. *Id.* at 4:7-11. However, the specification does not address what it means for there to be "only one option for activating the function." The specification also does not limit a "representation of a

function" to only one function, teaching instead that representation of function 21 corresponds to a specific function when no application is active, and, if an application is active, a function particular to that application. *Id.* at 4:7-15, 4:29-33. Thus, the only relevant disclosure that can be gleaned from the specification is that "any one" function (as opposed to multiple functions) might be activated through a gesture (and the specification never discloses multiple functions being activated by one user gesture at the same representation), which, as described above, would be inconsistent with the normal usage of "a" in the claim when it recites "a function." The specification therefore fails to allow a POSITA to make an informed and confident choice among the contending definitions.

3. Prosecution History

46. The original prosecution history of the application that issued as the '879 patent also supports multiple plausible readings of this claim term. The '879 patent issued from U.S. Patent Application No. 10/315,250 ("the '250 Application"), filed December 10, 2002. The '250 Application was originally filed with one independent claim, which is markedly different from the issued independent claim 1 of the '879 patent. Original claim 1 was similar to the embodiment disclosed in the specification and illustrated in Figure 1 of the '879 patent:

1. User interface for a mobile handheld computer unit,

> where said computer unit comprises a touch sensitive area, which touch sensitive area is divided into a menu area and a display area,
>
> where said computer unit is adapted to run several applications simultaneously, and to present an active application on top of any other application on said display area,
>
> characterised in, that said menu area is adapted to present a representation of a first, a second and a third predefined function,
>
> that said first function is a general application dependent function,
> that said second function is a keyboard function,
> that said third function is a task and file manager, and

> that **any one of said three functions can be activated when said touch sensitive area detects a movement of an object** with its starting point within the representation of said function on said menu area and with a direction from said menu area to said display area.

Appx. B ('879 patent File History ("'879 FH"), 12/10/2002 Claims) at 10 (emphasis added). In the first incarnation of the '879 patent, the applicant described the activation operation as a "movement of an object."

47. After numerous rejections by the Examiner and amendments by the applicant to independent claim 1, in a June 30, 2010 amendment Neonode introduced the disputed term to distinguish the prior art Hirshberg reference from the claimed "representation of a function" that responds to a "touch-and-glide operation." Ex. 3 ('879 FH, 6/30/2010 Amendment), at 2, 8-9. Hirshberg discloses multifunction keys, where each key corresponds to multiple characters and responds to multiple gestures such that, for example, an "H" is entered by contacting a key and moving up/north, and an "I" is entered by contacting the same key and moving right/east. Ex. 4 (U.S. Patent App. Pub. No. 2002/0027549 ("Hirshberg")) at Abstract, FIGs. 1, 2 (trace 508 ("H"), trace 506 ("I")), [0059]. The applicant remarked that "Hirshberg teaches a touch and glide operation only for keys that comprise several characters," Ex. 3 ('879 FH, 6/30/2010 Amendment) at 8 (emphasis added), and "for single character keys Hirshberg teaches using a conventional touch operation without a glide." *Id.* at 9 (emphasis in original). Neonode further stated "[i]n distinction, the claimed invention uses a multi-step touch-and-glide operation for representations that consist of only one option for activating a function." *Id.* at 9 (emphasis in original). Neonode underlined the pertinent language where it believed the distinction was:

Hirshberg	'879 Patent
"Applicant respectfully submits that Hirshberg teaches a touch and glide operation only for keys that comprise several characters. On the contrary, for single character keys Hirshberg teaches using a conventional touch operation without a glide"	"uses a multi-step touch-and-glide operation for representations that consist of only one option for activating a function"

Id. at 8-9 (emphasis in original).

48. The applicant also similarly stated that "[e]lement 22 consists of the one option of opening a keypad and text window," and "[e]lement 23 consists of the one option of opening a list of computer system applications and files," referring to each element as a "one-option element[]." *Id.* at 10. This suggests the "only one option" language of the claim refers to the representation's corresponding function, and means the representation corresponds to only one function, thereby distinguishing Hirshberg's keys that "comprise" or provide for different functions, i.e., entry of "several characters." This interpretation of "only one option" is that the independent claim does not apply to representations that correspond to multiple potential functions. Rather, the scope of the '879 patent is limited to representations of only a single function (such as Hirshberg's single character key) that are also activated by a touch-and-glide gesture. In other words, applicant distinguished Hirshberg because its single character keys (i.e., only one function) did not utilize a glide gesture and the Hirshberg keys that did utilize a touch-and-glide gesture were not limited to a single function.

49. But the applicant further stated, in identifying support in the specification for the amendment, that "each representation 21-23… consists of only one option for activating its corresponding function." *Id.* at 10 (emphasis in original). In contrast to the distinction discussed above, this suggests the disputed term means there is only one option for how to activate (e.g., a gesture) a representation's "corresponding function." Applicant's statements could be

interpreted to mean that a user interface in which a representation's corresponding function can be activated using two or more different types of gestures would not fall within the scope of the '879 patent. In this manner, Hirshberg's multiple-character keys would not practice the limitation because each key responds to multiple gestures. For example, a key representing one character on the left side and one character on the right side would allow for multiple gestures, e.g., touch and move left and touch and move right, to enter a character.

50. In sum, a POSITA would have found the prosecution history to add more confusion than clarity regarding the meaning of the disputed claim term. The prosecution history is thus insufficient to help a POSITA to choose amongst the multiple potential meanings with any confidence, let alone reasonable confidence. Moreover, even if the prosecution statements suggest that the correct meaning is that only one function is associated with the representation, such a meaning (as noted above) would be inconsistent with the plain meaning by reading the "activating" term out of the claim.

4. IPR Statements

51. I understand that there were two *inter partes* review (IPR) proceedings against the '879 patent: IPR2021-00144 (the "Samsung IPR") and IPR2021-01041 (the "Google IPR"). Neonode's statements in the Google IPR are internally contradictory as well as contradictory to the statements in the original prosecution history, and therefore fail to provide reasonable certainty as to which of the multiple definitions of the disputed claim term is correct.

52. Neonode initially stated that a POSITA would understand the "only one option" term limited the representation to a *single* function. In IPR2021-01041, where Petitioner Google LLC challenged the '879 patent, Neonode explained in its Patent Owner Response that the "representation presents the user with one option of what to activate." Ex. 5 (IPR2021-01041,

Paper 29 ("POR")) at 5 (emphasis added). A POSITA would have therefore understood Neonode to be arguing that the disputed term means the representation is limited to only a single function. Neonode also argued that the "one-option limitation" should not be interpreted to "require that each function associated with the representation of the function can be activated only by one gesture." *Id.* at 52 (emphasis added). During the IPR oral hearing, Neonode confirmed that it was "not proposing that the representation of a function can only be activated with one gesture." Ex. 6 (IPR2021-01041, Paper 50 ("Record of Oral Hearing")) at 48:2-3. Likewise, Neonode's expert, Dr. Rosenberg, opined that "there [need] be only a single option with respect to the representation of the function regardless of the direction of 'gliding . . . away.'" Ex. 5 (IPR2021-01041, POR) at 52 (emphasis added); Appx. C (IPR2021-1041, EX2019 ("Rosenberg 2nd Decl.")) at ¶ 105. A POSITA would interpret these affirmative statements to mean that for the disputed term, the representation represents only a ***single function,*** and allows for ***multiple options*** for how to activate the function.

53. But during the very same oral hearing, Neonode contradicted its earlier statements. The IPR Board commented during Patent Owner's oral argument on this claim limitation that "if we put aside the prosecution history for a moment and just looked at the plain language, it seems like it could be read to say that a representation could have multiple functions and that there's only one option for activating each of the functions that could be associated with that representation." Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 71:25-72:13 (emphasis added). Neonode then abandoned its earlier position in the IPR and its arguments in the prosecution history, making clear that "we are not arguing that the representation must only have one function. That's not what we're arguing." *Id.* at 72:23-24 (emphasis added); *see also* Ex. 7 (IPR2021-01041, Paper 44 ("PO Sur-Reply")) at 10 ("Neonode does not argue that the

representation must represent 'only one function'"); Ex. 10 (IPR2021-01041, EX1031 ("Rosenberg Tr.")) at 45:24-47:4, 48:6-49:3 (explaining "function" is a very broad term). Taking this statement at face value, a POSITA would understand that Neonode's position changed to allow for the representation to represent ***multiple functions***.

54. Moreover, Neonode pivoted to yet another contradictory interpretation at the sur-reply and hearing stage of the IPR that "a representation can at different times have multiple functions" so long as "at any given time, the user is given only one option in terms of what gesture to put in and what action to take." Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 73:1-6 (emphasis added); Ex. 7 (IPR2021-01041, PO Sur-Reply) at 10-11 ("even if the representation may represent different functions depending on the context, the user is provided with only one option on what action to initiate in that context.") (emphasis added). This appears to be a combination of both the function and gesture aspects of the representation, where the representation is limited to only one function and only one gesture for activating the single function, but with an added context of "at any given time." Based on these statements by Neonode, a POSITA would understand the term to mean the representation represents ***multiple functions***, but only permits ***one function to be activated at a time*** and that activation must result from a ***single specified gesture***. But there is no basis in the plain language of the claim for the added "at any given time" context.

55. Neonode managed, during a single IPR proceeding, to inconsistently argue that the "only one option" claim language:

- Does require that the representation have only one corresponding function;
- Does not require that the representation have only one corresponding function;
- Does require that each function be activated by a single gesture; and

- Does not require that each function be activated by a single gesture;

Thus, Neonode's statements in the Google IPR fail to provide the required reasonable certainty of meaning to the disputed claim term and instead amplify the lack of certainty.

B. "gliding" ('879 Patent, claim 1)

Defendants' Proposed Construction	Neonode's Proposed Construction
Indefinite.	Plain meaning, not including a drag and drop operation.

56. I understand that Neonode has not provided its understanding of the plain and ordinary meaning of "gliding" in this litigation, or what the term does and does not include. In the Samsung IPR, Neonode stated that "The Plain Meaning Confirms 'Gliding' And 'Dragging' Are Distinct," but did not articulate what aspect of a "glide" makes it distinct from a "drag" in its briefing. Ex. 9 (IPR2021-00144, Paper 49 ("PO Sur-Reply")) at 7-9. In the Google IPR, Neonode argued that interpreting a "flick" gesture as a "glide" is "contrary to the plain meaning . . . . " Ex. 5 (IPR2021-1041, POR) at 35. Only in the Google IPR did Neonode's papers suggest a meaning of "glide," which it alleged to be "a longer, continuous and effortless motion." *Id*. at 44. However, nothing in the intrinsic evidence provides any guidance as to the boundaries of the claimed "gliding" that would allow a POSITA to make the distinctions Neonode asserted in the IPRs, namely how to distinguish when a gesture is a "glide," and when it is instead a "flick" or a "drag."

57. Claim 1 recites "activating the function . . . by a multi-step operation comprising . . . (ii) the object gliding along the touch sensitive area away from the touched location." Ex. 1 ('879 patent) at 6:52-57. The specification never uses the word "glide" or "gliding," or "flick" or "drag," or any variations thereof. Instead, the specification recites activating a function by detecting the "movement of an object" as shown in Figure 2. *See id.*,

4:7-9, 2:10-12 (emphasis added). But a "glide," "flick," and "drag" all correspond to "movement of an object." The specification thus provides no information to a POSITA that would allow them to distinguish between a "glide" and a "flick" or a "drag." For example, a POSITA recognizes that the action of the finger in Figure 2 is the same for a "glide" and for what Neonode calls a "flick" and a "drag." Neonode's expert in the IPRs against the '879 patent agreed. Ex. 10 (IPR2021-01041, Rosenberg Tr.) at 21:4-22:6, 36:2-12 (admitting that flick and glide gestures both start at a touched location and move away from the touched location while continuing to touch the screen); Ex. 11 (IPR2021-00144, EX2007 ("Rosenberg Decl.")) at ¶ 65 (stating a "glide" and a "drag" "may have overlapping movements").

58. During the parties' hearing in the Samsung IPR, one of the PTAB judges asked Neonode to explain how to distinguish between a "glide" and a "drag." Neonode's counsel responded, without pointing to any intrinsic or other evidence to support his statement, that "dragging is much more intensive, harder and laborious, whereas a glide is much more seamless and effortless." Ex. 19 (IPR2021-00144, Paper 55 ("Record of Oral Hearing")) at 46:1-4. Neonode's counsel asked the judge whether his explanation answered his question, to which the judge responded: "I guess it doesn't answer mine because I still don't know how to look at the description of the actual movement in the [prior art] reference and determine whether it's a slider or a glide or not. . . . Well, it could just be that they mean the same thing, that the description of the glide that is a movement of something along the touchscreen is a glide. That seems like the plain and ordinary meaning. I mean, you're telling me that's a drag and I'm trying to figure out, well, how is that not a glide?" *Id.* at 46:14-47:2; *see also id.* at 40:1-45:1, 52:20-53:20 (Neonode's counsel indicating that an alleged difference between a glide and a drag is the amount of effort, and a glide "is a much more generic movement"). However, intensity,

hardness, labor, seamlessness, and effort find no support in the patent or the prosecution history. Nor are these terms of art that a POSITA would be able to use to identify the boundary between a "glide" and a "drag" with reasonable certainty. For example, there is no guidance as to the boundary between an intensive, laborious gesture and an effortless gesture. The same gesture might be considered effortless by one person and laborious by another.

59. Neonode argued in the Google IPR that a "glide" is distinguished from a "flick" based on multiple parameters, including speed, distance, effort, jerkiness and smoothness. *See* Ex. 5 (IPR2021-1041, POR) at 41 ("'flick' is [] a jerky, quick and short motion"), 43 ("flick" "plain meaning [is] a short, jerky motion"), 44 ("glide" is a "longer, continuous and effortless motion" whereas a flick is "higher speed and shorter distance"); Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 46:19-21 ("glide, which again consistently requires a smooth, continuous, and effortless movement"). None of these parameters find support in the patent itself, nor are they mentioned in the prosecution history, and certainly not in a way that would allow a POSITA to make a distinction between a glide and a flick. Neonode admitted that, to make such distinctions between types of movement, the system would have to "keep track of the characteristics of the motion, whether it's speed or acceleration or distance . . . that would make it a gliding as opposed to a flick." Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 50:14-21. But neither the claims nor the patent specification teach which, if any, of the characteristics of the motion are relevant to distinguishing a glide from a flick.

60. The hindsight identification of movement parameters by Neonode's expert in the IPR proceedings does not provide scope to the claim language. For example, even if a programmer chose a certain speed to identify a flick (*see* Appx. C (IPR2021-1041, Rosenberg 2nd Decl.) at ¶ 84: "slower" for glide, "faster" for flick), there are no guidelines in the intrinsic

record to inform a POSITA what speed is for a flick as opposed to a glide. In other words, a programmer would not know, based on the intrinsic record, when they have crossed the threshold in their programmed speed attribute from a movement allegedly outside the claim scope (flick), to one allegedly in claim scope (glide). Similarly, if the difference between the two gestures is dependent on distance as the parameter (*see id.* at ¶ 86 (a flick "only moves on the screen for a very short distance")), a programmer would not know based on the intrinsic record when they crossed the threshold in the programmed distance attribute from a flick to a glide. Put another way, a programmer would not know how "short" is "very short," according to Dr. Rosenberg. A POSITA would face the same challenges in distinguishing a "glide" from a "drag."

61. Moreover, Dr. Rosenberg suggests that additional factors related to the particular device might impact whether a gesture is the claimed "glide" or the allegedly excluded "flick," such as screen size, resolution of the screen, input device, and the task. Ex. 10 (IPR2021-01041, Rosenberg Tr.) at 27:15-29:6. But the intrinsic record provides no guidance on how to use these factors to distinguish between a glide and flick. For example, to the extent Dr. Rosenberg is suggesting the vertical stroke gesture well-known for Palm users might be a glide gesture on a Palm device, but a flick on a larger device, the intrinsic record still fails to inform a POSITA where the thresholds are in the various factors to distinguish between the gestures. Dr. Rosenberg admitted the difference between a flick and a glide "would really depend on so many attributes" that are absent from the '879 patent and the intrinsic record. *Id.* at 29:2-6.

62. Dr. Rosenberg also agreed during the IPRs that the action of the finger described in Figure 2 of the '879 patent is the same for a "glide," "flick," and a "drag." *Id.* at 21:4-22:6, 36:2-12 (admitting that flick and glide gestures both start at a touched location and move away

from the touched location while continuing to touch the screen); Ex. 11 (IPR2021-00144, Rosenberg Decl.) at ¶ 65 (stating a "glide" and a "drag" "may have overlapping movements").

63. Nothing in the claims or specification, or prosecution history, provides a POSITA with guidance on how to interpret Neonode's IPR statements or how to determine objective boundaries for the claimed "gliding" such that a POSITA could determine when a gesture is a "glide" and when the gesture is a "flick" or a "drag." The claims merely recite an "object gliding along the touch sensitive area away from the touched location." Ex. 1 ('879 patent) at 6:56-57. The claim does not provide any indication related to other parameters that would be useful objective boundaries for a POSITA to understand the scope of what "gliding" is.

64. The specification never uses the word "glide" or "gliding" to refer to the claimed function activation. Instead, the specification recites activation by detecting the "movement of an object" (e.g., a pen or finger) as shown in Figure 2. *See id.* at 4:7-9, 2:10-12 (emphasis added). It never describes "gliding." Nor does it use or define any similar words, such as "swipe," "slide," "drag," or "flick," or reference any of the parameters Neonode identified in IPR, such as speed, distance, effort, jerkiness, or smoothness. The '879 patent provides no guidance to a POSITA on when a movement may be considered a "glide" (and therefore within scope) or a "drag" or "flick" (allegedly out of scope, according to Neonode). For example, Figure 2 of the patent depicts the action of the user to activate a function. *Id.* at 4:7-11, FIG. 2. The user contacts the touch-sensitive surface with a finger, then moves the finger in contact with the surface away from the initially touched location. A POSITA would have recognized that the action of the finger in Figure 2 is the same for a "glide" as well as what Neonode calls a "flick" and a "drag." The specification makes no mention of a need to differentiate between user

gestures or how gestures could be differentiated. Rather, Figure 2's illustration and description (*id.*) describe only touch and movement.

65. A POSITA would understand the movement as it is described in the specification could include a drag, swipe, flick, and/or variations of those movements (e.g., a slide, a chevron, or curl gesture). *See, e.g.*, Ex. 11 (IPR2021-00144, Rosenberg Decl.) at ¶ 65 ("'gliding . . . away' and a drag-and-drop gesture . . . may have overlapping movements"); Ex. 17 (IPR2021-00144, EX1053 ("Rosenberg Tr.")) at 48:19-49:6 (agreeing that the action of the thumb or stylus in FIG. 2 would be similar for glide, swipe, and drag); Appx. C (IPR2021-1041, Rosenberg 2nd Decl.) at ¶ 84 (equating claimed gliding to swiping).

66. Like the claims, the specification does not describe the parameters of how a "gliding" gesture may be measured, such as time, distance, and speed, or some specific combination thereof, as discussed above. The specification provides no guidance, for example, so as to distinguish gestures such as "flick" and "drag." For example, there is no mention of timing as to how long the object is in contact with the touch sensitive area which would prove useful in programming when a successful "glide" is completed in order to activate the function, as well as in distinguishing gestures that are in contact with the screen for a shorter or longer length of time. There is no mention of the speed of the movement to establish how slow or fast the execution of a claimed glide is and how that might be different from a flick or drag. There is no mention of distance travelled by the glide on the touch sensitive area to inform a POSITA as to what movements are too short or too long to be considered a glide as opposed to a flick or a drag. Nor is there any mention of how any of these three parameters might be used together to distinguish a glide from a flick or a drag. Accordingly, a POSITA would recognize that there are

no objective guidelines in the specification that provide a POSITA with reasonable certainty as to how the claimed "glide" might distinguish a "flick" or "drag."

67. When the patent specification does mention "speed of the movement … of the object 4," it is not in the context of function activation, but instead marking the name of an application or file at a "speed lower than the speed of the movement . . . of the object." Ex. 1 ('879 patent) at 5:29-35 ("FIG. 8 shows that navigation in the list is performed by moving the object 4 in a direction I towards the top 231*a* of the list 231 or towards J the bottom 231*b* of the list 231. This movement I, J of the object 4 will cause the marking 232 to move K, L in the same direction. The speed of the movement K, L of the marking 232 is lower than the speed of the movement I, J of the object **4**.") (emphasis added), FIG. 8; Ex. 10 (IPR2021-01041, Rosenberg Tr.) at 34:24-35:17. This operation is unrelated to the claimed touch and glide motion that activates a function. For example, when scrolling through a list, the '879 patent teaches that the marking depicting a highlighted list item would travel slower than the speed of the actual touch. In other words, the highlight marking would "follow" the touch rather than be directly underneath it. A POSITA would understand this has nothing to do with the claimed touch and glide motion to activate a function. Accordingly, a POSITA would understand the patent to identify speed as a factor where appropriate, and that the lack of discussion of speed for the action that activates a function informs them that speed is not relevant to that operation.

68. The original patent application made no mention of "gliding," and the term was added by amendment years after the original filing. Appx. D ('879 FH, 9/8/2008 Applicant Amendment) at 5, 9-10. It is worth noting the amendment was not solely to change the original claim term "moving" to "gliding"—rather, the amendment was made in the larger context of the object's movement in contact with or across the surface of the touch-sensitive area:

each function of said ~~first, second, and third functions simultaneously represented in said menu area~~ plurality of functions being mapped to a corresponding location in the touch sensitive area at which the representation of the function is displayed, and being activated by ~~the single step of a blunt~~ an object touching the corresponding location and then gliding along the touch sensitive area away from the location ~~moving in a direction from a starting point that is the representation of the corresponding one of said first, second, and third functions in said menu area to said display area being detected by~~

~~said touch sensitive area, thereby allowing low precision navigation of the user interface using the blunt object, so that the user interface can be operated by one hand, where the blunt object is a finger~~.

Id., at 5-6 (claim 1).

12. (currently amended) The computer readable medium of claim **1**, wherein the user interface is characterised in, that an active application,

function, service or setting is moved on one step by ~~moving~~ gliding the ~~blunt~~ object along the touch sensitive area from ~~the~~ left ~~of said display area~~ to ~~the~~ right ~~of said display area~~, and that the active application, function, service or setting is closed or backed one step by ~~moving~~ gliding the ~~blunt~~ object along the touch sensitive area from ~~the~~ right ~~of said display area~~ to ~~the~~ left ~~of said display area~~.

Id., 9-10 (claim 12).

69. The applicant's only alleged support for the amendment fails to provide relevant guidance: The applicant relied only on disclosures of "movement" generally, not "gliding." *Id.* at 26. No distinction was made between a "glide" and a "drag" or "flick" in the amendments. Rather, the applicant equated the claimed "gliding" with "swiping," "rubbing," and "sliding." Ex. 12 ('879 FH, 9/3/2008 Applicant Letter to Examiner) at 1; *see also* Appx. D ('879 FH, 9/8/2008 Applicant Amendment) at 25 ("The subject claimed invention teaches 'rubbing,' 'touch-and-glide' movements to operate a user interface, whereby the thumb touches a touch-sensitive screen and rubs, or glides, along the screen without lifting the thumb.") (emphasis

added); Appx. E ('879 FH, 4/22/2009 Applicant Amendment) at 7 ("User inputs include finger taps and movements. One such movement is a 'rubbing' / 'swiping' / 'touch-and-glide' movement, whereby a finger touches a touch-sensitive screen at a location where an icon for a function is displayed, and then rubs / swipes / glides, along the touch screen away from the location without lifting the finger.") (emphasis added). Like "gliding," none of these other allegedly synonymous terms appear in the specification. The prosecution in fact demonstrates that a "glide" is also synonymous with a "drag" and a "flick." The applicant equated a "dragging" movement of the prior art with the claimed "gliding" movement. Ex. 13 ('879 FH, 2/22/2010 Amendment) at 8 (characterizing the prior art Hoshino's "drag" as a "glide").

Function activation operation of claimed invention vs. that of Hoshino

Id.

70. Furthermore, the sole named inventor described the claimed "glide" movement as a "drag." Ex. 14 (IPR2021-01041, EX1044 ("Goertz Tr.")) at 41:8-41:15. And the examiner, during prosecution, when searching for potentially relevant prior art, searched for "flick" alongside "glide" and "swipe." Ex. 15 ('879 FH, 12/23/2008 Search Notes) at 2, 5-7; Ex. 16 ('879 FH, 7/8/2009 Search Notes) at 3, 6-10.

71. Neonode's expert also agreed during the IPR that the "movement" disclosed in the specification is a genus or "superset" of types of object movements for function activation. Ex. 17 (IPR2021-00144, Rosenberg Tr.) at 45:25-47:8 ("'movement' . . . is a superset that represents many types of movements"); Ex. 10 (IPR2021-1041, Rosenberg Tr.) at 17:17-18:8, 20:1-8 (agreeing "movement is like a genus"). However, Neonode did not cite any evidence that

a POSITA in December 2002—when the '879 patent application was filed—understood whether or how any alleged "species" within that genus could be distinguished in a way relevant to the '879 patent claims. And it was not until September of 2008—nearly six years after the '879 patent application was filed and after much of the industry development of touch user interface and gesture recognition technology had occurred—that the applicant introduced the "gliding" claim term. Ex. 12 ('879 FH, 9/3/2008 Applicant Letter to Examiner) at 2, 5 (proposed amendment adding "gliding"). In 2002, most input methods for touch sensitive user interfaces were accomplished via a pen or stylus, although such interfaces also accepted input by a finger. Mobile device platforms such as Windows CE or Pocket PC, which were common at the time, substantially treated these inputs as a surrogate for mouse input. *See, e.g.*, Appx. F (Robert O'Hara, *Microsoft Windows CE: A New Handheld Computing Platform*, Proceedings of the 1997 ACM Symposium on Applied Computing, 1997) at 295-96. In 2002, a popular design philosophy for touch interfaces on mobile devices, for example, was to leverage the user's knowledge and experience in using Windows on a PC and its applications such that users would have a shorter learning curve. *Id*. The touch input at its most basic components was understood as a series of X and Y coordinates between when the user touched down on the touch sensitive surface and when the user released the pen or finger from the surface (a.k.a. "touch up"). It was common for a user interface that accepted touch-input gestures to translate these coordinates to correspond to known mouse gestures.

72. After the filing of the application that issued as the '879 patent, advancements were made in the field of touch input and their user interfaces. For example, touch input devices became mainstream and well-known, such as the iPhone, which was released in 2007. Devices that relied primarily on gesture-based input, mostly with a finger rather than a stylus or pen,

became more common. Even though the physical gestures, such as tap, double tap, and touch-and-move, were already known in the art and to users, the development of systems and applications shifted away from treating touch input as though it emulated mouse input and instead enabled various gesture recognizers. Software development kits (SDKs) and application programming interfaces (APIs) were introduced that enabled recognition of specific gestures rather than translating touch input to mouse or keyboard inputs. However, this change of focus to recognition of specific gestures, and what some people may now recognize as commonplace in 2023, occurred many years after the 2002 filing date for the '879 patent. Thus, in 2002, given the '879 patent claims and specification, the boundaries between a "flick" and a "glide" or a "drag" and a "glide" were not determinable with any reasonable certainty. A POSITA would not have found the terms "continuous and effortless," for example, to provide reasonable certainty from the perspective of a designer as to the boundary of a "glide" so as to exclude a "drag" or a "flick."

73. The intrinsic record fails to provide sufficient guidance to identify with reasonable certainty the boundaries between the claimed "glide" and the "flick" and "drag" that Neonode has argued are outside the scope of the claim.

74. In addition, during prosecution of a related child patent application, the applicant admitted that a "flick" movement includes some amount of a "glide:"

> and is different than a glide. A person of ordinary skill in the art would not look to Robertson's flick gesture, nor to the miniscule amount of gliding involved in a flick, to derive a feature for a gesture of gliding on a display.

Appx. G (16/796,880 Application File History, 9/27/2021 Applicant Letter) at 4; Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 48:6-9 (Neonode suggesting a representation "activated by both a gliding away and a flick" would satisfy the "only one option for activating

the function" limitation"). During prosecution of another related patent, U.S. 8,812,993 (the "'993 patent"), the applicant presented claims reciting an "object gliding along the touch sensitive display in a specific direction," and chose not to distinguish the claimed "gliding" from prior art disclosing a "flick" and also a "drag." Appx. H ('993 patent File History ("'993 FH"), 12/28/2011 Preliminary Amendment) at 6, 10-11. The applicant argued that, "[r]egarding novelty . . . , the closest prior art known to applicant" included "'T-Cube: A Fast, Self-Disclosing, Pen-Based Alphabet' to Venolia et al. ('Venolia')." *Id.* at 10. Venolia discloses an interface for entering text to a pen-based computer where different letters are entered depending on the direction of a flick or drag. Appx. I (Venolia) at 265. Similar to the gesture shown in the '879 patent's Figure 2, Venolia describes that a "flick gesture has two easily controlled aspects: its starting point and its direction," and Venolia describes the gesture as including the operation of "[d]ragging the pen." *Id.* [1] The applicant, however, did not distinguish Venolia based on any alleged difference between the claimed "gliding" and Venolia's flick/drag. Appx. H ('993 FH, 12/28/2011 Preliminary Amendment) at 10-11. Venolia was also used to reject claims during prosecution of the '879 patent, but there, too, the applicant did not distinguish Venolia based on any alleged difference between Venolia's flick/drag and a "glide." Ex. 8 ('879 FH, 8/23/2007 Amendment) at 15-16. Accordingly, a POSITA would not conclude from the prosecution history that a "flick" or "drag" are outside the scope of the claimed "glide," nor does the

[1] "Each flick starts in one of the nine cells arranged into a 'target' shown in Figure 1a. The target is typically 0.3 to 0.7 inches in diameter. The direction of the flick can be vertical, horizontal or diagonal, specifying one of eight directions. The combination of nine starting cells with eight directions yields 72 different gestures. Each gesture represents a character, e.g., 'w' or '7', or an operation, e.g. Backspace, Return or Shift." Appx. I (Venolia) at 265. "Dragging the pen highlights one of the characters (c), and shows the result of the drag (d)." *Id.*

prosecution history provide any guidance with reasonable certainty as to the alleged boundaries between the claimed "glide" and a "flick" or "drag."

75. Neonode's claim construction proposal seeks to exclude a "drag-and-drop operation" from the scope of the disputed "gliding" terms. Neither the plain meaning of the claim nor anything in the specification excludes a "drag-and-drop operation." A "drag-and-drop operation" may have a multitude of characteristics depending on the designer, none of which are addressed in the patent. The claimed "gliding" operation describes the movement of the object (e.g., a pen or finger) along the touch sensitive area, that is, the action of the user to interact with the touch sensitive area. Ex. 1 ('879 patent) at 4:7-11, FIG. 2. In contrast, a POSITA would understand that at least the "and-drop" part of a "drag-and-drop operation" typically refers to actions performed by the user interface, not just the user. The "drag" might refer to visually moving something on the display, and the "drop" would typically refer to a specifically programmed interaction between a selected source item (such as a file or other icon) and a target. Thus, the action of the user "gliding" a finger or pen "along the touch sensitive area" does not preclude a "drag-and-drop" response from the user interface. In other words, nothing about Figure 2 that illustrates the user gesture, or the disputed "gliding" terms in the claim, excludes a "drag-and-drop operation" response from the user interface. Nothing in the intrinsic evidence distinguishes a drag from a glide, for example, and nothing in the claims preclude a subsequent "drop" following the "glide" of the claim.

76. Moreover, the specification fails to provide a flowchart or any description of how the user interface reacts during the "movement" shown in Figure 2, such as what might be shown on the display area 3 or what happens to the representation (if anything) during the gesture. The claimed multi-step operation as described with respect to Figure 2, which illustrates how the

user's finger physically interacts with the touch sensitive area 1, is a motion and does not bear on what is displayed on the user interface in response to the motion. *See id*. The only information about how the user interface reacts is that a function is activated and displayed in the display area 3, where Figures 3, 5, and 6 show the display *after* activation of a function, not during the "movement" of Figure 2 that activates the function. *Id.* at 4:12-15, 4:36-38, 4:63-65, FIGs. 3, 5, 6. Indeed, a POSITA would understand the plain language of the "gliding . . . away" limitation (putting aside the last limitation of the claim) could allow for a drag-and-drop operation, because such an operation would include a pen/finger touching down on the source and dragging their pen/finger away from the touched location. Accordingly, the specification does not speak to whether a "drag-and-drop operation" is excluded or part of the alleged invention. Even if a "drag-and-drop operation" were to be excluded from the scope of the "gliding" terms, there is no guidance in the specification to inform a POSITA with reasonable certainty as to what is excluded from the claim.

77. A POSITA would also have appreciated that drag-and-drop operations include specific programming of the underlying system. That is, specific programming of the underlying system would define items as a source/selection objects, and target/destination objects that receive the source via the "drop." Appx. J (IPR2021-00144, EX1059 Microsoft Windows, THE WINDOWS INTERFACE GUIDELINES – A GUIDE FOR DESIGNING SOFTWARE, February 1995) at 74-75 ("How the transferred object is integrated and displayed in the drop destination is determined by the destination's context."), 221-22 ("When the user drags a selection into a container, the container application can interpret the operation using information supplied by the source. . . ."). But none of those programming aspects are referenced by the "gliding . . . away" language of the claim or the specification. There are no flow charts or description that would exclude a "drag-

and-drop," and the specification tells the reader nothing about what happens to the "representations" of functions 21-23 during that movement. Ex. 17 (IPR2021-00144, Rosenberg Tr.), 34:8-36:14. A POSITA therefore would recognize that the gliding terms do not exclude "drag-and-drop" programming.

1. Numerous Potential Parameters

78. A POSITA would understand from Neonode's statements that numerous different parameters may be utilized to define a movement gesture on a touch sensitive interface, including distance, duration, direction, and exit/entry. Neither the patent, the intrinsic record, or Neonode itself provides a POSITA with an objective method for determining what is and is not a glide.

79. For example, a POSITA would recognize that a movement gesture like a glide could be understood in terms of the distance traveled by the object on the touch sensitive area. A POSITA would understand that no movement (e.g., a touch-down followed by a touch-up from the same or similar location) may be interpreted as a first gesture, a short movement as a second, different gesture, and a long movement as yet a third, different gesture. A POSITA would also have understood that a distance measurement may be absolute or relative to the device used. A POSITA would not have understood a "glide" gesture to be limited to any particular length. Rather, whether a gesture is understood as a glide or not based on length of movement would be dependent on implementation. There was no well-known or widely accepted distance threshold that could be used to distinguish a glide from other movement gestures, such as a flick, a drag or a "stroke" in 2002.

80. A POSITA would also have understood that a movement gesture like a glide could be understood in terms of the duration that the object is in contact with the touch sensitive

area. For example, a short duration may be interpreted as one gesture and a longer duration as a different gesture. A tap and long press is an example of differentiating gestures in terms of duration. Like distance, whether the duration of a touch represents one gesture or another depends on implementation. There was no well-known or widely accepted duration threshold that would distinguish a glide from a not-glide in 2002.

81. A POSITA would also have understood that a movement gesture like a glide could be understood in terms of both distance and duration. More specifically, a POSITA would have understood that a glide gesture could be understood based on the velocity of the movement. For example, a fast movement may be interpreted differently from a slow movement. Similarly, a movement with an ending velocity greater than a starting velocity may be interpreted differently from a movement that ends with a slower velocity than the starting velocity. There was no well-known or widely accepted velocity threshold or combination of thresholds in 2002 that would have provided a POSITA with reasonable confidence to distinguish a glide from other movement gestures, such as a flick or a drag.

82. A POSITA would have understood that a movement gesture like a glide could be understood in terms of exit from or entry into an area of the touch sensitive interface. For example, a gesture may incorporate movement out of a specific area and/or movement into a specific area to distinguish amongst movement gestures. For example, rather than using a distance parameter to determine whether the user's finger or pen has moved outside the area of an icon, the designer could instead use an exit-from approach using the display coordinates of the icon and the coordinates of the detected contact of the user's finger or pen. Though these types of design approaches were well known to a POSITA at the time of the application for the '879

patent, nothing in the claims or the specification provides any guidance how they might be used to distinguish the claimed glide from other movement gestures such as a flick or a drag.

83. The claims themselves make no mention of any of these parameters in defining a glide. The specification also does not mention any of these parameters in the context of understanding what is and is not a glide. Neonode's statements in IPR added confusion by injecting ambiguous and undefined limitations to the gliding term, including but not limited to smoothness and effortlessness. Even with the addition of those parameters, the POSITA does not have reasonable certainty as to how to distinguish the claimed "glide" from the "flick" and "drag" of the prior art that Neonode argued were different in the IPR proceedings.

2. Dictionary Definitions and Other Extrinsic Evidence

84. The extrinsic evidence also does not clarify the scope of this term for a POSITA. In the Google IPR, Neonode cited several general dictionary definitions of "flick" and "glide" from 1993, 1997, 2002, and 2012. None of the definitions are in the context of computing, let alone touchscreens, and none are from technical dictionaries. A POSITA would not understand the confusing comparison of these definitions to distinguish the claimed glide from Neonode's ill-defined "flick."

Dictionary		"Flick"	"Glide"
Merriam Webster [Ex. 2052]	1993	"a light sharp jerky stroke or movement"	"to move smoothly continuously and effortlessly"
American Heritage College Dictionary [Ex. 2050]	1997	"a light quick blow, jerk or touch"	"to move in a smooth effortless manner"
Oxford English Dictionary [Ex. 2057]	2002	"make or cause to make a sudden sharp movement"	"move with a smooth, quiet, continuous motion"
Oxford English Dictionary [Ex. 2049]	2012	"make a sudden sharp movement"	"move with a smooth quiet motion"

Ex. 5 (IPR2021-01041, POR) at 35-36. For example, both "flick" and "glide" are defined as movements and there is no clear delineation between the additional modifiers. While a "flick" is described as "light," the definitions of "glide" provide no similar description. A "flick" is also defined in terms of speed ("quick," "sudden") while the definitions of "glide" make no reference to speed. Indeed, a "smooth, quiet, continuous" motion can also be "quick" or "sudden." The definitions require line drawing on many different axes: forcefulness, speed, relative timing, effort, sound, etc. Applying the axes to a touchscreen application further muddies the waters: Do the axes change before, during, or after touching the screen? Are the axes relative to the screen, or relative to the object making the touch? Does the size of the screen or the object alter the axes? For example, a gesture on a large screen may be considered a "flick" due to the relatively low ratio between the movement distance and the screen size. The same motion on a smaller screen may be considered a glide due to the same gesture traveling a greater proportion of the screen size. *See also* Ex. 10 (IPR2021-01041, Rosenberg Tr.) at 27:15-29:6 (difference between a "flick" and a "glide" would depend on screen size, resolution of the screen, input device, "whether you're using a stylus, whether you're using a light pen, whether you're using a finger," and the task); Ex. 6 (IPR2021-01041, Record of Oral Hearing) at 61:3-10 (whether a specific movement is a swipe/glide or a flick is dependent on context). Or, a POSITA can easily envision a glide crossing some sort of imaginary line to become a flick if only it is performed quickly enough. But again, Neonode provides no specific speed in its construction of the term, and the '879 patent provides no indication that a "glide" excludes movements of certain speeds or distance. A POSITA would therefore interpret the "flick" and "glide" dictionary definitions to only muddle the issue as to whether a claimed "glide" encompasses a "flick."

85. At a more fundamental level, Neonode's definitions are far removed from the relevant inquiry here—what "gliding" means to a POSITA in the context of the '879 patent. Dr. Rosenberg only argues that the "common usage" of a "flick" is distinct from a "glide." Appx. C (IPR2021-01041, EX2019 ("Rosenberg 2nd Decl.")) at ¶ 78. None of the examples he cites are in the context of interactions with touchscreens, e.g., the flick of the wrist in basketball, flick football, and a flick of a finger in air. *Id.* How a user might perform a "flick" in the context of a touchscreen is different than all three of Dr. Rosenberg's illustrations. *Id.* Dr. Rosenberg then states the "plain and ordinary meaning" of "gliding" is "completely different," but again cites to no examples in the context of touchscreens, and instead points to ice skating, paragliding, and a slip n' slide. *Id.* at ¶ 79. The error in Dr. Rosenberg's analysis here is that the "plain and ordinary meaning" of the term is the meaning that the term would have *to a POSITA*—that is, the meaning in the context of the entire patent, not human experience at large. *Id.*

86. Contemporaneous prior art supports that swipes, a movement Neonode has conflated with glides, can be fast and traverse short distances, descriptors that are in keeping with Neonode's definitions of "flick." Appx. K (U.S. Patent No. 5,463,725 (filed Dec. 31, 1992) ("Henckel")) at 3:17-22 ("Thus, a series of short, fast swipes can be performed by the user to page quickly through the electronic book. For example, assuming a display device which is 12 inches wide, the user preferably need only make a swipe which is one-half to one inch long in order to cause a page to be turned.") (emphasis added). Neonode's arguments are further at odds with prior art that differentiates "swipe" and "drag" movements, whereas Neonode claims that a "glide," "swipe," and "drag" are the same movement. Appx. L (U.S. Patent Application Publication No. 2002/0015064 (filed Nov. 29, 2000) ("Robotham")) at [0328]-[0329] ("'swipe': a relatively quick traversal along a path,"; "'drag': a relatively slower traversal along a path");

[0334] ("The swipe and drag gestures are the 'selection mode' equivalents to move gestures. In selection mode, the speed of traversal is the primary factor used to differentiate a swipe from a drag gesture."); [0523] ("The swipe gesture is recognized when a swipe-compatible selection event meets the minimum swipe distance and velocity requirements (11-4)."); [0529] ("A drag motion is confirmed when the minimum swipe distance has been met, but the velocity of this motion is below the minimum swipe velocity."). A POSITA would understand that the delineations Neonode is drawing between glide/swipe/drag and flick are arbitrary because no such delineation exists with reasonable certainty in the prior art, leaving a POSITA without reasonable certainty as to what movement is the claimed "gliding" as opposed to the "flick" and "drag" that Neonode has argued are not a "glide."

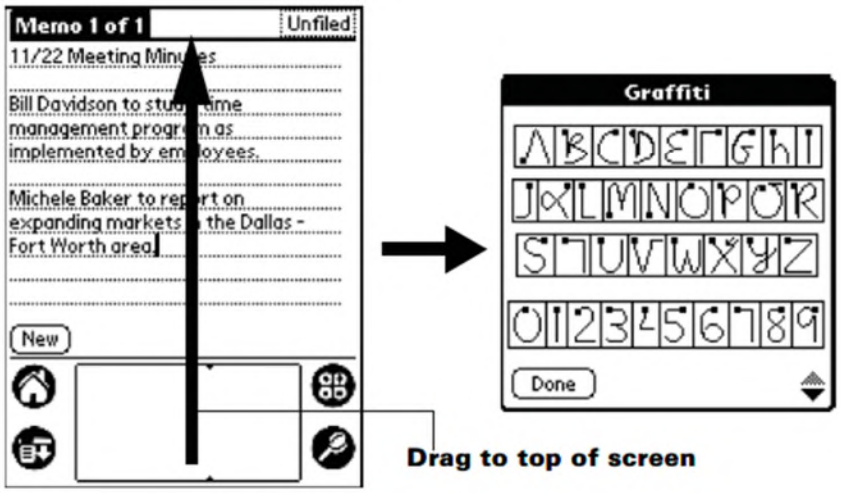
87. Still, other prior art simply uses the term "gliding" as a synonym for the broader term "moving," not unlike how the '879 specification's general "movement" disclosures are the only amendment support for the "gliding" claim language. Appx. M (David J. Ward et al., *Dasher – a Data Entry Interface Using Continuous Gestures and Language Models*, Proceedings of the 13th Annual ACM Symposium on User Interface Software and Technology 129 (2000)); *compare id.* at 131 ("The user writes [the string] by gliding towards the alphabetically ordered books and selecting the desired book.") (emphasis added) *with id. at* 130 ("The user moves the pen in the direction of a selection region, which either selects a character or reveals a further set of alternatives.") (emphasis added). A POSITA would equate the terms without a meaningful distinction.

88. Yet another contemporary prior art reference describes a user movement analogous to the user movement in Figure 2 as a "full-screen pen stroke" and a "[d]rag to top of screen," further evidence that it would not be clear to a POSITA that the term "gliding" is

immediately synonymous with the movement depicted in the '879 patent. Appx. N (IPR2021-00144, EX1026 Handbook for Palm m500 Series Handhelds (2001)) at 211.

Pen preferences

The Buttons Preferences screen enables you to change the assignment of the full-screen pen stroke. By default, the full-screen pen stroke activates Graffiti Help.



Id.

89. Therefore, the extrinsic evidence does not cure the term's indefiniteness and only confirms the term's lack of reasonably certain boundaries.

90. For at least the reasons stated above, a POSITA would not be able to identify with reasonable certainty the boundaries of the claimed "gliding" that allegedly exclude a "flick" and a "drag," and therefore the term is indefinite.

C. "a shell upon an operating system" ('879 Patent, claim 15)

Defendants' Proposed Construction	Neonode's Proposed Construction
No construction necessary; plain and ordinary meaning.	"A software interface between the user and an operating system."

91. Within the ’879 patent, the term “a shell upon an operating system” appears in claim 15, which reads “The computer readable medium of claim 1, characterised in, that said computer program code is adapted to function as a shell upon an operating system.” A POSITA would understand that according to the plain language of claim 15, the claim does not require the computer readable medium to *be* a shell upon an operating system. It merely requires that the medium is “adapted to function” as a shell upon an operating system. Therefore, a POSITA would understand the claimed “shell” includes software that provides the functions of a shell and is not limited to the shell being code residing within the operating system.

92. The ’879 specification provides little further description of the term, merely repeating similar language to that of claim 15: “The present invention also teaches that the computer program product is adapted to function as a shell upon an operations system.” Ex. 1 (’879 patent) at 6:35-37. A POSITA would understand the specification’s reference to “an operations system” to include the “operating system,” and that it would provide access to services and settings of the computer unit. *Id.* at 2:22-25 (“The icons are adapted to represent services or settings of the operations system of said computer unit, such as background picture, clock, users, help, etc. if no application is currently active on the computer unit.”). A POSITA would recognize that while some shells are part of their related operating systems, the ’879 patent specifically broadens its claim to include any program adapted to function as a shell. A POSITA would understand that the patent’s reference to a shell merely refers to a program that could function as an interface between the user and functionality within the operating system, regardless of whether the program was part of the operating system or not.

93. The AppLens interface is a contemporary example that ran as a shell on top of Microsoft Windows Mobile 2003. Appx. O (IPR2021-00144, EX2006 Amy K. Karlson et al.,

AppLens and LaunchTile: Two Designs for One-Handed Thumb Use on Small Devices, CHI 2005 | PAPERS: Small Devices 1) at 203, 206. A POSITA would recognize the AppLens interface to be a typical shell running on top of an operating system.

94. Contemporaneous patent applications are consistent with a POSITA's understanding at the time that shells need not be part of the operating system. For example, U.S. Patent 7,240,296 to Matthews ("Matthews") is directed "particularly to a graphical user interface for a computer operating system." Ex. 18 (Matthews) at 1:7-8. When describing the architecture of its system with respect to Figure 2 (shown below), Matthews states "[t]he navigation system 60 includes a shell component 64 associated with the shell user interface 62. The shell component 64 is integrated into (or alternatively is external to and associated with) the operating system 35." *Id.* at 6:11-14 (emphasis added). A POSITA would understand this disclosure to accurately reflect the breadth of "shell," i.e., a shell may be separate or intertwined with an operating system.

95. A POSITA would understand that Matthews's description of "Shell UI 62" that sits outside the operating system, but provides access to functions within it, is directly analogous to the '879 patent's "computer program code, which, when read by a mobile handheld computer unit, allows the computer to present a user interface" (claim 1), "characterised in, that said computer program code is adapted to function as a shell upon an operating system" (claim 15).

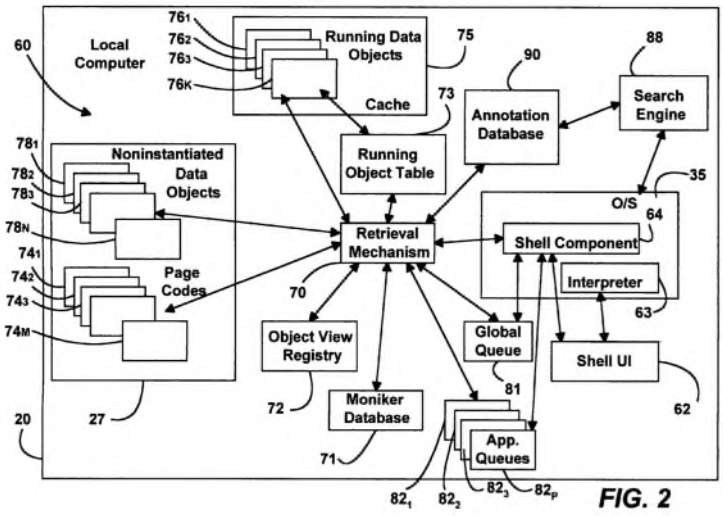


FIG. 2

Id. at FIG. 2.

96. A dictionary definition from the relevant time period defines "shell" as "[a]n outer layer of a program that provides the user interface, or the user's way of commanding the computer. Instead of presenting the user with a bland C prompt, i.e. C:> the shell presents a list of programs that the user can choose from, making it easier, allegedly, to figure out which program to run." Appx. P (Harry Newton, NEWTON'S TELECOM DICTIONARY (19th ed. 2003)) at 718. A POSITA would understand this definition to be agnostic as to the orientation of the shell to the operating system—it uses no "between" language like in Neonode's construction and does not discuss operating systems in its definition.

97. I have reviewed Neonode's dictionary definitions cited as extrinsic evidence for this claim term. The definitions evidence a variety of potential interpretations for shell, including, notably, "[a] piece of software, usually a separate program, that provides direct communication between the user and the operating system." Appx. Q (Microsoft Computer Dictionary (4th ed. 1999)) at 407 (emphasis added). The Microsoft Computer Dictionary definition reflects a POSITA's understanding that a shell can be "a separate program" from the operating system.

I hereby declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Date: April 14, 2023

Andy Cockburn